

1872

Figures, of
Course on Hygiene,
to be memorized.

1872.

Average daily amount of food.

Weekly allowance for institutions, armies, &c.

Average time for digestion of a dinner.

Specific gravity of good milk.

Amount of cream on " "

Composition of good wheat.

Amount of organic matter, & solids, in
good drinking water

Quantity of water needed daily, per head.

Amount of lead making drinking water unsafe.

Alcoholic strength of ale, wines & spirits.

Maximum of arsenic eaten as a stimulant

Ditto of opium or laudanum, &c

Proportion of principal constituents of the atmosphere

Extent of increase of Carbonic acid in rooms &c

Proportion of Carbonic acid in air dangerous to life.

Amount of variation of height of barometer

Degree of relative humidity desirable for health

Amount of air used by an adult in breathing in 24 hours

Minimum of required airspace - dormitories & hospitals.

Figures -

¹⁰
Average daily amount of food
for an adult — 40 oz. solid,
at least $\frac{2}{3}$ of it vegetable; & 20 to
50 oz. liquid. For weekly
allowance — in institutions, armies, &c., —
not less than 260 oz. of solids per week.

~~Time~~ Time required to digest an ordinary dinner ^{3^{to}} ~~3 to 4~~ hours.

Specific gravity of good ^{cows} milk,
1028-3²/₅ compared with water 1000.

Percentage of cream ought to be from 8 to
12 parts in 100 of ^{cows} milk.

~~Time of soaking chopped beef for beef-~~
~~tea (1 pound to pint, or $\frac{1}{2}$ pint, of water), 2 hours;~~
~~then boil for $\frac{1}{2}$ an hour only.~~

~~To beef essence, boil water around the~~
~~bottle of chopped beef, 3 or 4 hours.~~

Heat necessary for disinfection

Number of windows in hospital ward

Height of ceiling, ditto -

Dimensions of ditto -

Highest temperature in shade, U. S.

in sun -

Lowest, in Philada.

Annual mean, Phila. & N. York

Annual rainfall - Phila. & London

Maximum ditto, anywhere

Annual mean temperature of torrid climate

temperate "

frigid & polar

Temperature of baths - cold, cool, tepid, warm, hot,

& hot dry air bath -

Summer temperature of surf at sea shore

Average amount of work of a day laborer

Maximum

Length of step in marching - rate per hour - per day -

Composition of good wheat,
 10 to 14 per cent. of gluten & albumen,
 50 to 75 per cent. of starch, — the
 rest sugar, gum & salts —

In good drinking water,
 (10) not more than $1\frac{1}{2}$ grains of organic matter
 in a gallon — total solids ^{better} not to
 be more than 35 grains per gallon, —
 although 50 or more grs mineral solids allowable.

Amount of water needed daily
 in food and drink, on the average, $\frac{1}{2}$ fl. oz. for
 each pound of gross weight; part being in
 solid food; ^{actual} quantity varying with ex-
 ercise & ~~temperature~~ ^{temperature}.

Including cleaning of person & clothing,
~~16 gallons daily per head; 9 gallons~~
~~more for sewerage, in all, 25 to 30 gallons daily.~~
 In hospitals (for baths also) 40 to 50 gallons daily.

in 24 hours for adult -

for young persons

Hours of study; for mature & young student

Best number of School hours, for health

Age of greatest number of insane, Europe

in America

Proportion born of the two sexes

12 Dying 17 17 18

Inevitable annual mortality everywhere

Actual annual mortality, Phila)

total annual mortality, (see)

London

N. Alex.

Maximilian, 1847

Average age at death of mankind
the world over —————

the world over

(10) Quantity of lead in drinking water which will cause symptoms of poisoning in some persons, $\frac{1}{100}$ of a grain in a gallon; unsafe for every one, $\frac{1}{10}$ of a grain per gallon.

(3)
~~Then in tea, - $\frac{1}{2}$ per cent to 2 per cent.~~
~~Cocoa butter in cacao, over 50 per cent.~~

Alcoholic strength of ale, 5 to 10 per cent. of alcohol by weight. Lager beer from 4 to ^{7 or} 8 per cent. (5)

(10)
Portwine, Madeira & Sherry, 16 to 25 per cent. by weight. Claret, 7 to 15 or 18. Champagne, 5 to 15. Rhine wines, 5 to 15. Whiskey, Gin, Brandy, about 50 per cent. Rum, 50 to 75 or more. ^{fourth of}
~~Hygienic doses, - $\frac{1}{2}$ glass wine or ale; one or two teas~~
~~ponfuls to a table spoonful, of spirits.~~ (10)

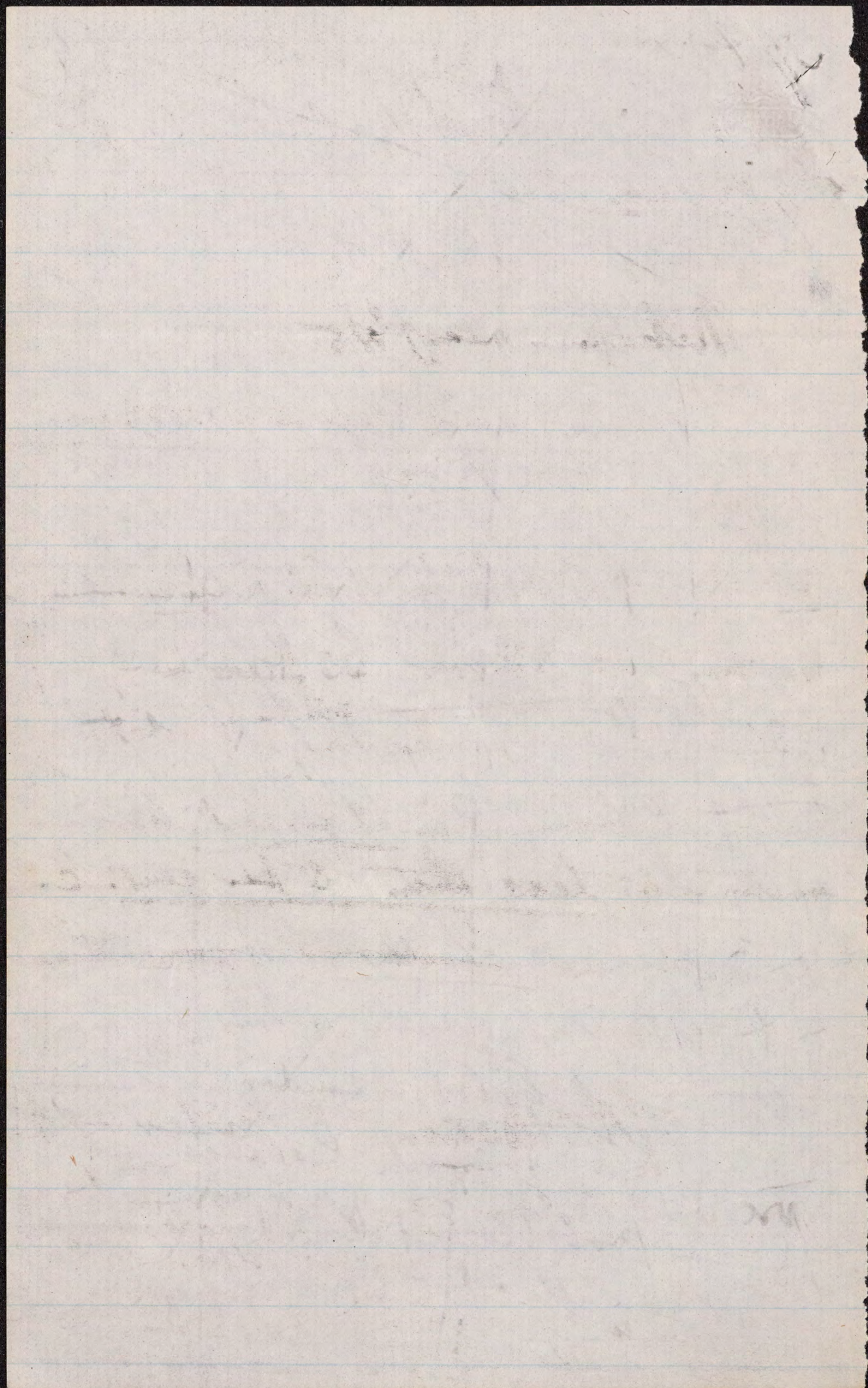
~~CONFIDENTIAL~~

Amount of Nicotin in tobacco, 2 to 8 per cent.

~~Dose of Arsenic and opium~~

Maximum amount of arsenic known to be eaten ^{daily} by those long accustomed to it, 3 or 4 grains.

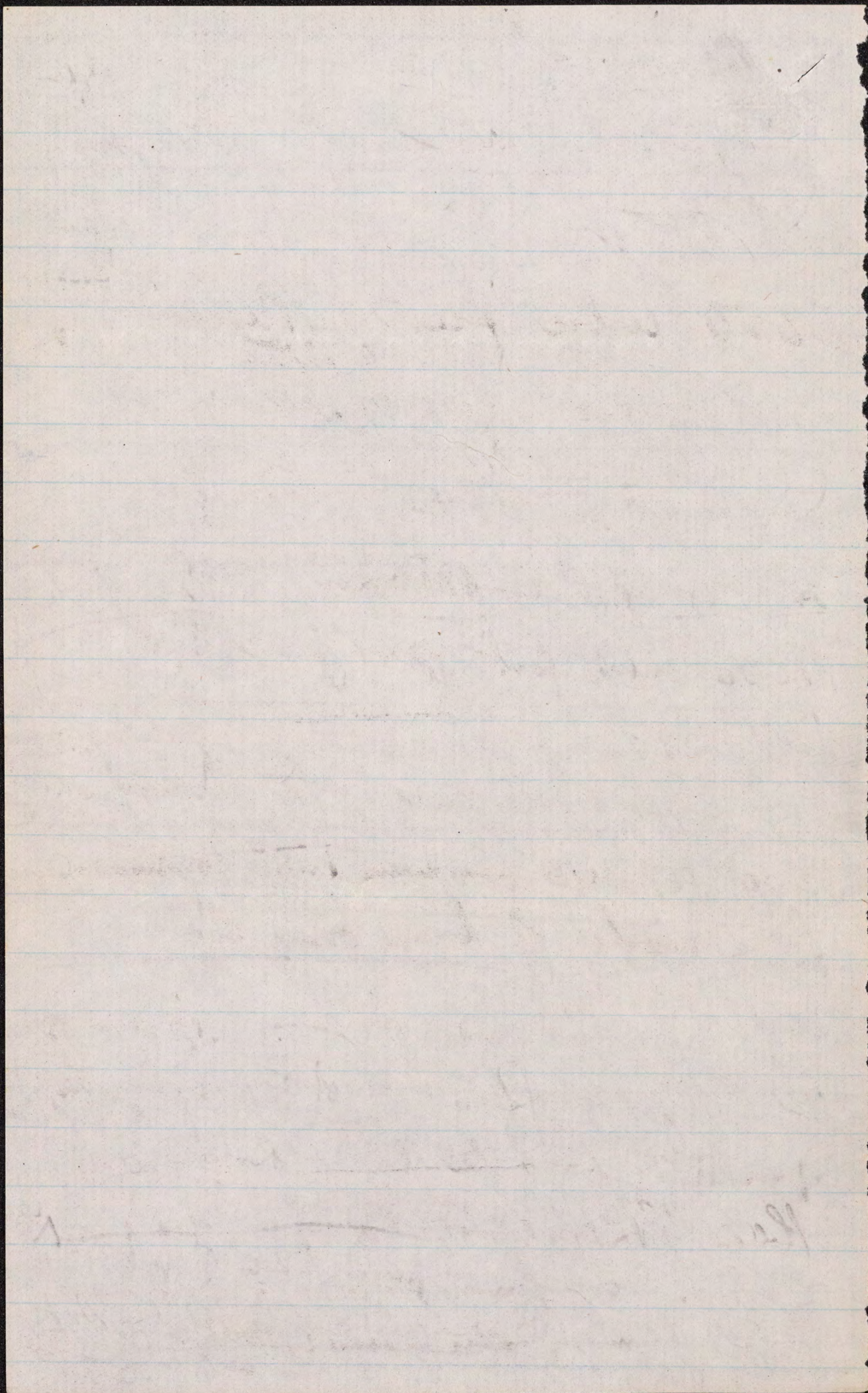
Maximum of laudanum ^{said to have been} taken in 24 hours ~~a day~~, one quart! Of Sulphate of morphia, 20 grains. These amounts however, are very rare. A Wineglass full of laudanum daily is less uncommon, after long habit. Laudanum takers, commonly, very much less than this. Average probably not beyond, ^{if so much as,} a teaspoonful daily, even after the habit is confirmed.



Of the ^{substances are all well to remember; but} contents of the Atmosphere, the ⁽⁵⁾
~~figures~~ figures that are important, are
Oxygen - nearly $\frac{1}{5}$ (10)
Nitrogen - nearly $\frac{4}{5}$
Carbonic acid 4 parts in 10,000 average
= $\frac{1}{2500}$ 2500

Increase of Carbonic acid in close apartments
sometimes up to & over 60 parts in 10,000;
seldom, however, more than ^{20 or} 30 ditto. (10)
Fatal to man, from 10 per cent. down
sometimes to less than 5 per cent. E-
ven 2 per cent. ~~breathed for some time~~
is dangerous.

(10) Of the ^{of the} Barometer, ^{heights of the}
mercury ^{the} extreme range of variations is
about 3 inches: from about 28° to about 31° .
A desirable relative humidity, ^{sat-}
uration being 100, - will be about 68.5.

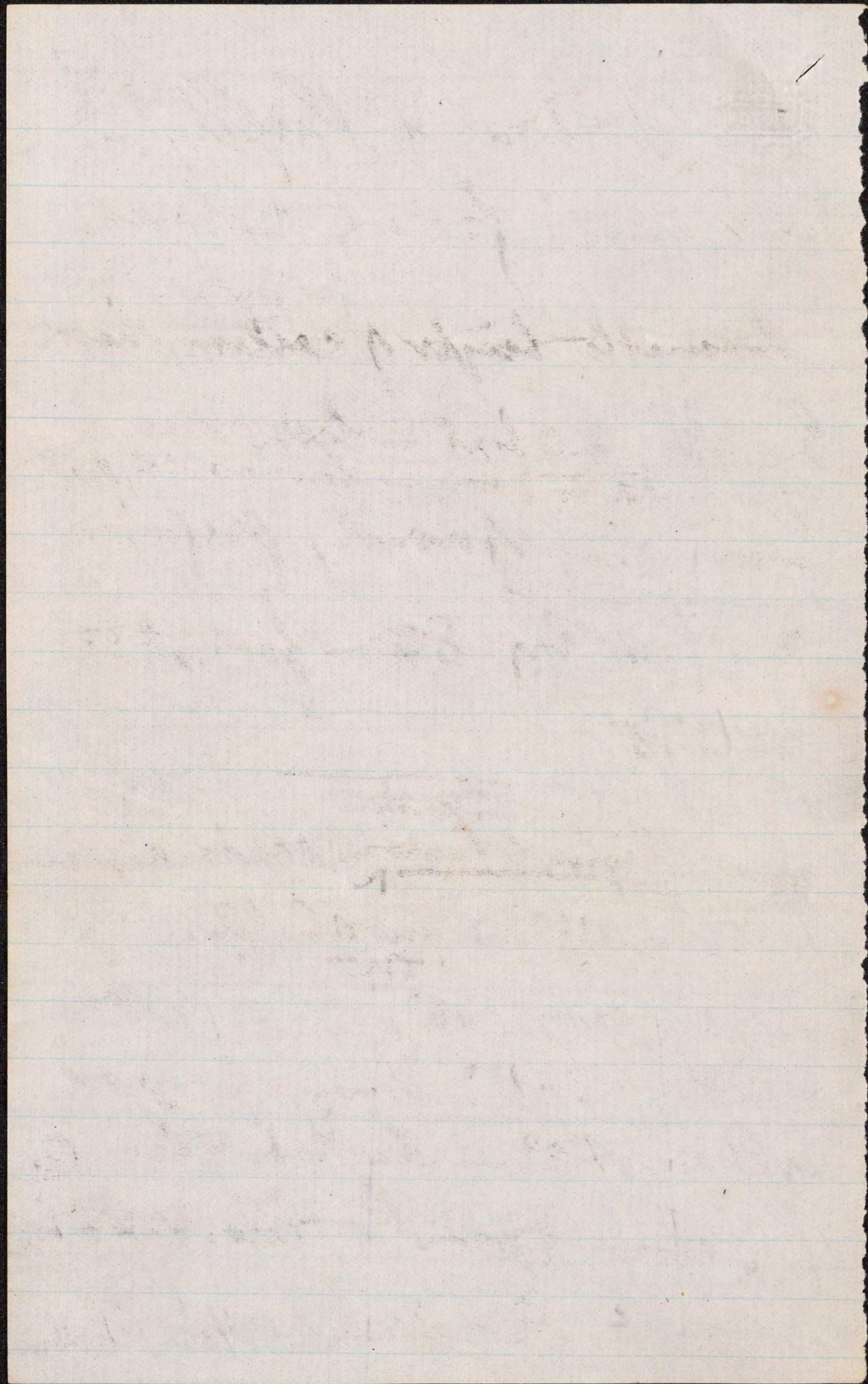


Amount of
Air used up by an
adult man in 24 hours, about
350 cubic feet. Minimum ^{proper}
air space for one ^{healthy} person in a
Dormitory, 700 cubic feet

In hospital — Minimum 1000, better
1500 cubic feet per patient, 2000
Cub. feet of air per hour for each patient, desirable.

Heat necessary to disinfect ^{rapidly,}
200° to 300° — even 150° continued
for a number of hours may do.

For disinfecting privies, 1 pound of
Sulph. iron or chloride of lime in a gallon
of water. For water-closets or bedpans, —
1 fl. oz. Chloride of soda liquid, to a quart of water.
Carbolic acid from 1 per cent to 90 per cent
solution. Potassium permanganate for wash cloths 1/3000 to 1 gallon
of water,



(10)

(7)

Windows in Hospital -

ward - 1 for every 2 beds.

Desirable height of ceiling, not
for Hospital,

less than 20 feet - better more.
Some authorities say as low as 16 feet.

Dimensions of ward, preferred,

25 feet by 80 - for 24 to 32

patients.

temperature

(10)

Highest ~~heat~~ in shade anywhere

in U.S., 113° , in part of California &

Texas: in sun, 134° to 136° ; lowest we know

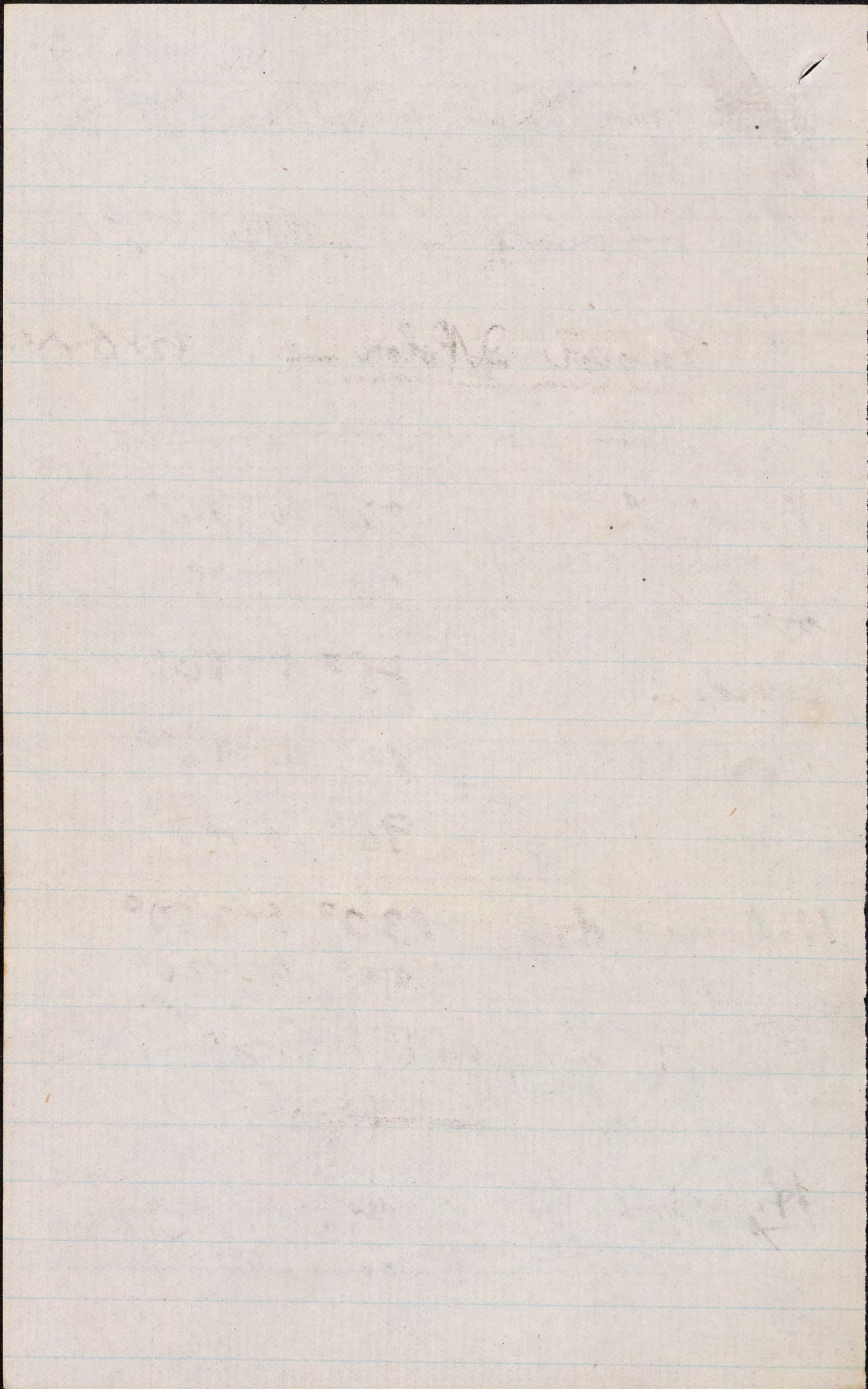
in Philada., -14° . Average for year

at Phila. 53° - New York 52°

(9)

Annual rain^{fall} at Phila. 42 to 45 in.

London 20 in - Maximum anywhere, over 600 in.



(10) (8)

Torrid Climate - Ann. Mean 80° F.

Temperate - ~~50° to 60°~~

Frigid & Polar - 32° to 0°

Cold bath - 32° to 70° F.

Cool 70 to 85°

Tepid - 85° to 90°

Warm 90° to 96°

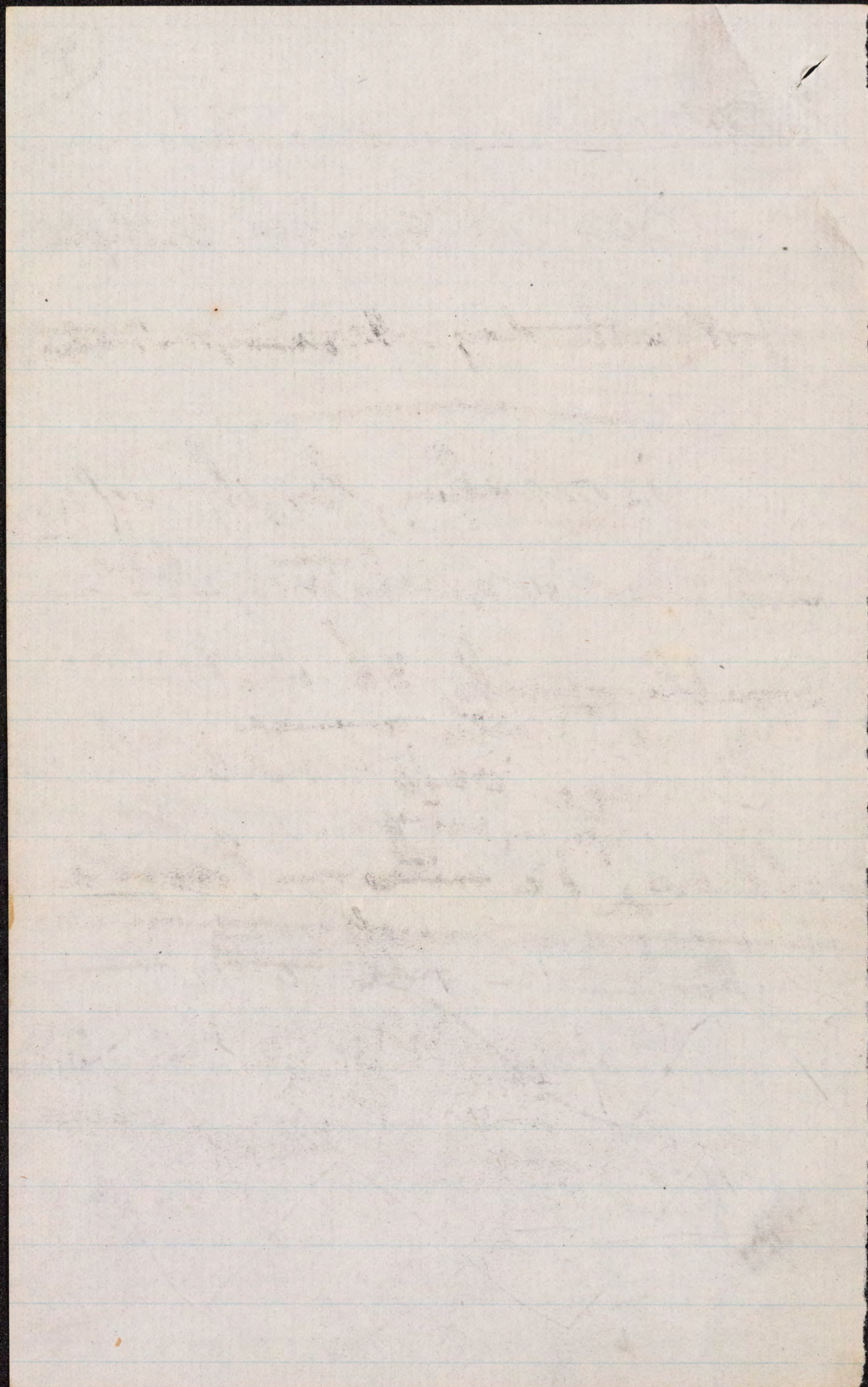
Hot 96° to 100°

Hot air, dry, 130° to 250°

Vapor - 100° to 120°

~~Summer~~
~~Temperature of Sea water at Cape May shore~~
 ~~70° to 80°~~

~~Hygienic time in surf at once,~~
~~15 minutes!~~



(9) (9)

Average work of a day laborer
= 300 foot-tons - i.e. tons lifted
1 foot in the day. Maximum, over 700 tons.

In marching, length of (10)
step, slow or quick time, 28 to 30 in.
Double quick, 36 in. Per hour,
a little under 3 miles average.
Average day's march for
or others carrying any luggage,
soldiers, 12 miles — Possible
forced march with good men,
rarely more — this destructive however
40 miles —
if repeated. Maximum of pedestrian, 100 m. in 22 hrs,
500 m. in 5 days.

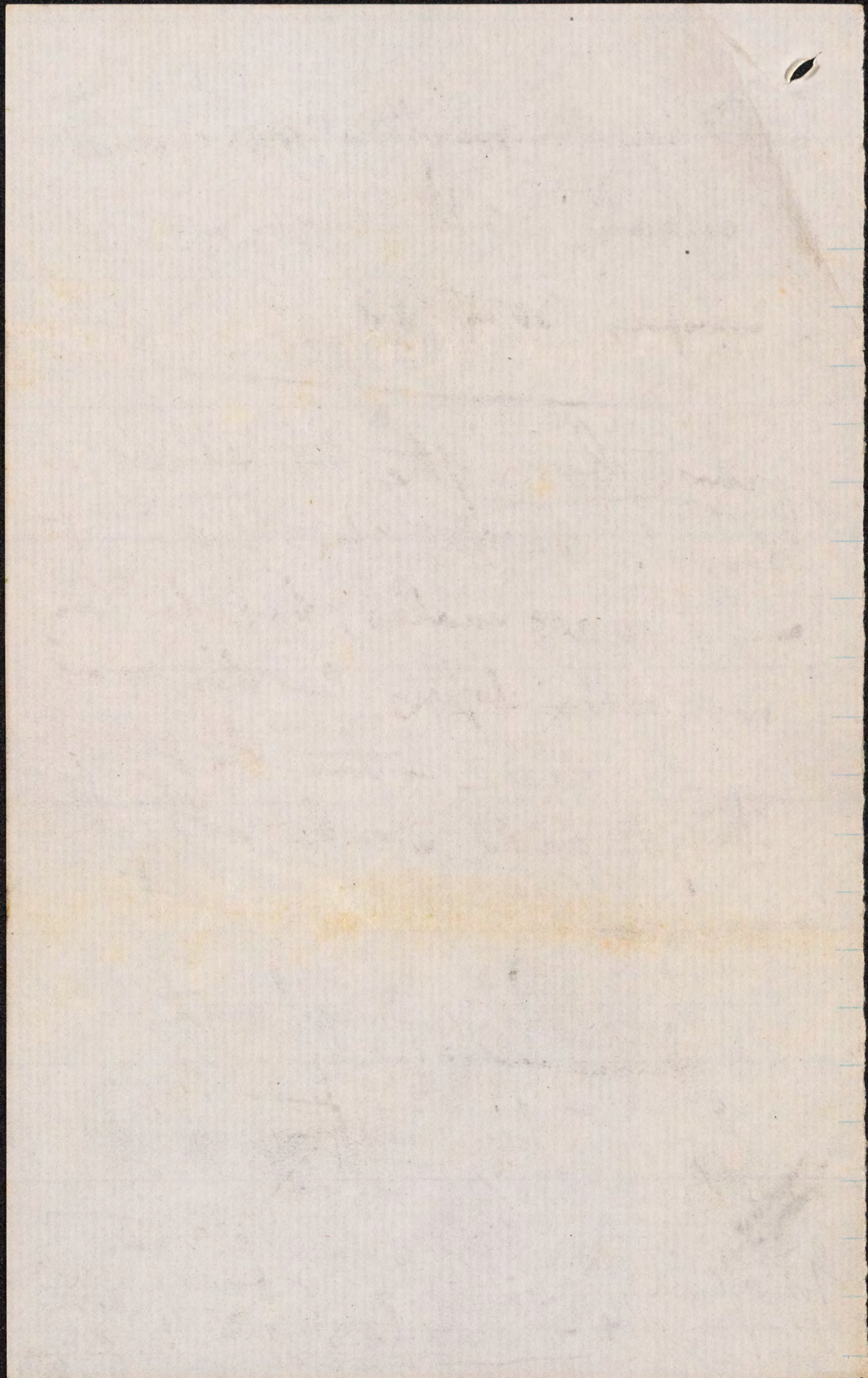
(Gen. Markensie with cavalry, in
1873, pursued some marauders into Mexico,
over 100 miles there and back, in 41 hours,
fighting & capturing on the way)



Amount of sleep needed
in 24 hours for every adult, to
preserve health:—Minimum, 6 hours—
almost every one better with 7—
many who work hard with brain
or muscle, best with 8—some
9; especially ^{those} of nervous temperament.

Young persons more; infants
10 to 12 hours of the 24—& gradually
lessen thru childhood & youth. Under
10 years they need 10 hours.

Hours for study—mature student,
^{enough,} 8—average 6:—under 12 yrs, 3—
For school, ^{hygienically,} best 2 sessions, 5 hours in all.
If 1 session, never more than 5 hrs, with 1/2 hr. recess.
Change place or room every hour at least.



VI

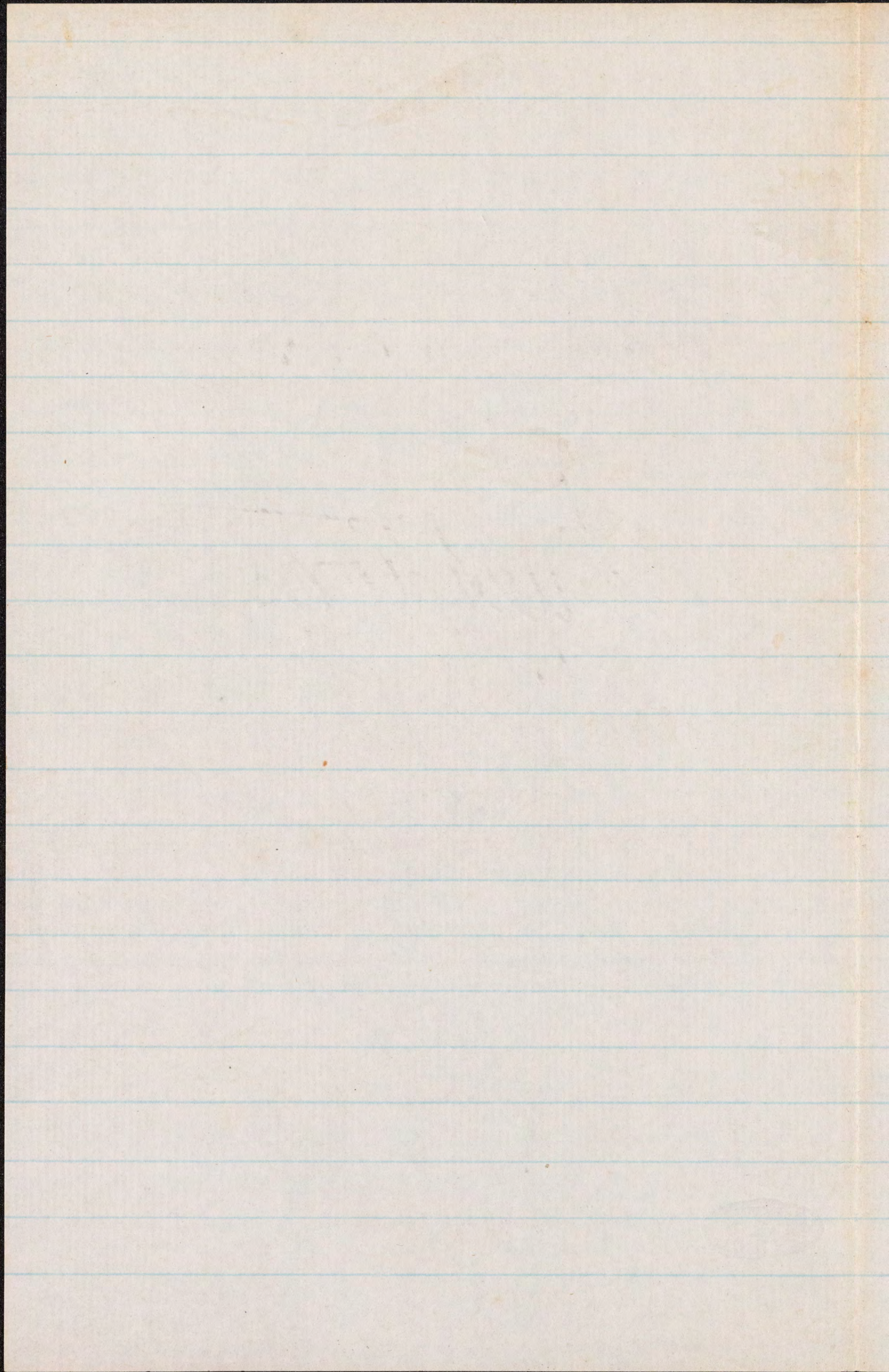
Age of greatest no. of men,
 in America ^{between} 20 & 30 yrs —
 Europe, 30 to 40 "

Of those born of the two sexes, —
 there are less than 9400 females to
 every 10,000 males; but for every
 10,000 males dying, less than 9200
 females die — so that the popula-
 tion of the world is on the whole ^{kept} ~~very~~
 even —

Inevitable annual mortality
 everywhere — 15 to 17 per 1000.
 Deaths actually, — 18.70 N. Y.,
 28. (8) to 1000 — Phila, near 23 —
 London 24 — N. O. has been ^{formerly} ~~been~~ ^{formerly} 80.
 Average age of man at death the world over, 33 yrs.

Figs. Hygiene

Questions



Questions On Physiology & Hygiene - at

1873

W. M. Colley - 1873

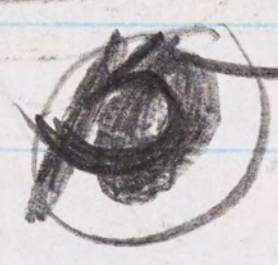
Name 9 simple elements found in the human body;
1. ~~State the principles of~~ ~~State without~~
also 5 organizable proximate principles and 5 unorg-
anizable proximate principles found in the progress of the
cell theory to the present time. (10)

2. What is the probable immediate source
of the force used in the body for
muscular action? (5)

3. Describe the whole process of the
digestion of a piece of bread and
butter. (10)

4. Compare the arm and hand of a
man with the anterior limb of a
monkey, horse, bat and bird. (5)

5. State, 1st, a physiological, and 2nd, the
common clinical classification of the forms
or kinds of insanity. (10)

6. Explain the mechanism of inspi-
-ration, of ordinary expiration, and
of forced expiration. 

6. ~~What is the probable use of~~
~~the rods of Corti?~~ (15)

7. Why do we need to explain our
not seeing all objects upside down;
and what is the best explanation
therefor? (10)

8. Mention four ways or modes in which
disinfectants may act; with an
example under each. (10)

9. Describe the usual effects of the
cold, warm, and hot air baths; and
state how we may know, in any case,
whether cold bathing is beneficial
or not. (10)

10. State the order of succession of sponta-
neous changes in milk; its principal
modes of deterioration; and the methods
of detecting and exposing these. (10)

Questions

On

Physiology & Hygiene

W.M.C.

1873

Mrs. Ridgway
Mrs. Palmer

Questions on
Physiology & Hygiene
W. M. C. - 1873.

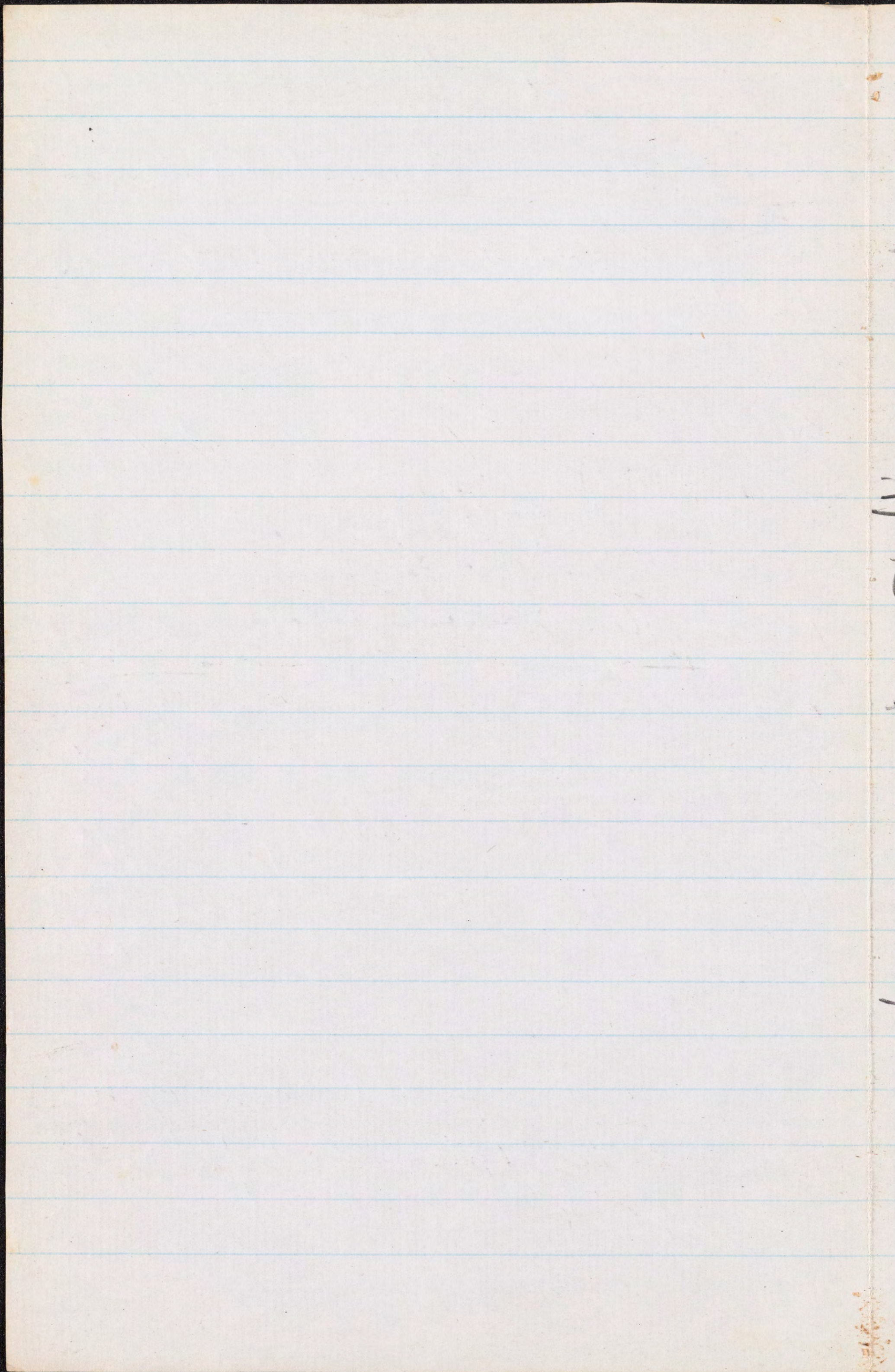
1873

1. State the principal steps (without the authors' names) in the progress of the "Cell-theory" to the present time.

2. What is the probable immediate source of the force used in the ~~teeth~~ ~~of man with those of the lion and those of the O.~~ for muscular action?

3. Describe the whole process of the digestion of a piece of bread and butter.

4. Compare the arm and hand of a man with the ~~anterior~~ limb of a monkey, horse, bat and bird.



5. State ~~the~~ physiological, and also the common clinical classification, of the forms or kinds of insanity.

6. ~~Explain the mechanism of the respiration, and of ordinary expiration, and of forced expiration.~~
Explain the mechanism of the respiration, ~~and of ordinary expiration, and of forced expiration.~~

7. Why do we need to explain our not seeing all objects upside down; and what is the best explanation thereof?

8. Mention four ways ^{or modes} in which disinfectants may act; and give an example under each.

9. Describe the usual effects of the cold bath, the warm bath and the hot ~~water~~ air bath; and state ~~how we may know, by the effect of cold bath, whether it is beneficial or not.~~ ^{the proper test for the substances}

10. Mention the order of succession of spontaneous changes in milk; its principal modes of deterioration; and the methods of detecting and exposing these.

This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some faint smudges and discoloration, characteristic of old paper. The left edge of the page is bound into a dark, textured material, possibly leather or cloth, which is visible as a vertical strip on the left side. The overall lighting is even, highlighting the subtle variations in the paper's color and texture.

1874

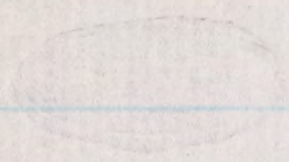
Questions on Physiology & Hygiene

WMC. 1874.

1. Compare the teeth and Alimentary-ary canal, respectively, of man, with those of the lion and those of the sheep; and state the argument deduced therefrom concerning the kind of diet natural to man.
2. State what is known about the coagulation of the blood.
3. Give an account of the chyle; its origin, nature, ~~place~~ and movement, final destination and use.
4. State the functions, respectively, of the medulla oblongata; rods of Corti of the ear; choroid coat of the eye; inferior ligaments of

the larynx; and lingual branch
of the 5th pair of nerves.

5. Mention five different kinds
of Natural water, and state
the nature of their ~~respective~~ differences
and comparative adaptation for use;
mentioning also a disease ^{which is} promoted
~~promoted~~ by impure drinking water.



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The larynx; and lingual branch
of the 5th pair of nerves.

5. Mention four different kinds
of natural water; and state
the nature of their respective differences
and applications for use;

Questions on Physiology & Hygiene.

WMC. 1874.

1 nerve of taste

1 rigor mortis

Menière's disease - what does it illustrate or exemplify -

Nervous system of starfish -

oyster - lobster - vertebrate

/// Circulation of insect -

heart of fish, reptile, bird

What disease a ganglion in tetanus - what medicines

Functions of cerebellum - general ganglion stimulants?

What definition or account of instant?

Fritsch, Hering & Sherrin's exper. conclusion

1 Functions of 3^d, 6th, ~~3^d & 6th~~ & 12th

parts of 8th p. of nerves

unconscious cerebration

Eustachian tube - chain muscle -

ceruminous glands - leucocytes - lacteals -

Physiological explana. of table - turning

1 Changes of eyes & sight from

old age - myopia - hypermetropia - asthenopia

Kind of Deafness, less or greater

How know hemorrhage from arteries & veins

How to find the arteries in any region of the body -

LENGTH OF TIME TO PRODUCE DEATH.

Prussic Acid or Cyanide of Potassium, from a few minutes to 2 or 3 hrs.

Strychnia, from 10 minutes to 6 hrs.

Aconite, 3 or 4 hrs.

Arsenic, from 20 minutes to 4 hrs.

Opium or Morphia, 6 to 12 hrs.

Gelseminum, 7 or 8 hrs.

Stramonium, 8 hrs.

Digitalis, over 20 hrs.

Sulphuric or Hydrochloric Acid, 16 to 24 hrs.

Nitrate of Silver, uncertain; seldom fatal.

Oxalic Acid, from a few minutes to several days.

Ammonia, a few minutes.

Corrosive Sublimate, less than half an hour.

Phosphorus, 4 hrs.

Nitric Acid, an hour and three quarters.

Chloride of Barium, 2 hrs.

Nitrate of Potassium, 2 or 3 hrs.

All irritant poisons are variable in the time elapsing before death.

Physiology

Fibrin - (globul. or fibrinoplastin -
paraglob. or fibrinogen)

4 reasons for believing that the bile assists in

Glycogen

digestion -

Exp. of B. & Scher
1 hr after meal
most enteric. canal
mostly absorbed

Osmosis

animals and plants - & man
3 types of respiration - insect - fish - mammal

Compare circula. in art. & veins

1 Wernicke - aphasia -

1 Pepsin - lactin - cholesterol -

hemoglobin - glycogen -

Spec. grav. of urine

good - cows milk -

Spontan. generation

3 classes of reflex actions,
1 int example of each

Inhibition -

aphasia -

Deep Somnambulism

Cephalization - homology
rudimentary parts -

LENGTH OF TIME TO PRODUCE DEATH.

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Nitrate of Potassium, 2 or 3 hrs.

All irritant poisons are variable in the time elapsing be-
fore death.

1. ~~What proposition concerns the~~
life-force ~~is~~ of fundamental impor-
 tance in rational pathology?

2. ① State the principal steps (authors' names not necessary) in the progress of the "cell-theory" to the present time.

3. State what you know of the coagulation of the blood.

4. ~~Describe the~~ Give the history of the chyle; — its ^{mode of production} ~~production~~, ^{movement} ~~movement~~, and final destination.

5. What organs take part in the function of assimilation?

6. State all ~~you~~ know about osmosis.

7. What are the ^{essential} ~~principal~~ differences between animals and plants?

8. Describe the arrangement of the digestive apparatus of the sheep, showing how it differs from that of man.

9. ⁽²⁾ Compare the teeth of man with ⁽²⁾ those of the lion and the ox.

10. ⁽³⁾ Describe the whole process of the digestion of a piece of bread and butter.

11. Describe the ~~heart~~ of a fish, a reptile, a bird and a mammal.

12. Explain the terms systole, diastole, heart's impulse, ~~of the heart~~ vass-motor ^{nerves}, and nutritive affinity.

13. State two opposite views, held by different authors, concerning the arterial circulation, and its regulation by the Sympathetic (ganglionic) nervous system.

14. What is the normal blood heat in man; and ~~how is it~~ by what means is it sustained in the body?

15. State what you know of the production, composition and uses of the bile.

16. What are the uses of the skin, and of its secretions? ⁽³⁾

17. What is the ^{immediate} probable source of the force used ^{in the body} for muscular action?

18. Give an account of the Reflex mortis.

19. ⁽⁵⁾ Compare the ^{and hand} arm of a man with the corresponding limb of a ~~monkey~~, horse, ~~bat~~ and bird.

20. ⁽⁸⁾ Describe the ^{signals} plan of the Nervous System of a radiate, molluscan, ^{an} articulate and ^a vertebrate animal.

21. Give an example of a simple excitor-motor — a sensor-motor, & ^{an} emoto-motor action.

22. Name three theories of the functions of the cerebellum, and state which is preferable.

23. Mention the functions of the
2nd, 6th, 1st branch of the 5th, 9th,
and spinal accessory nerves.

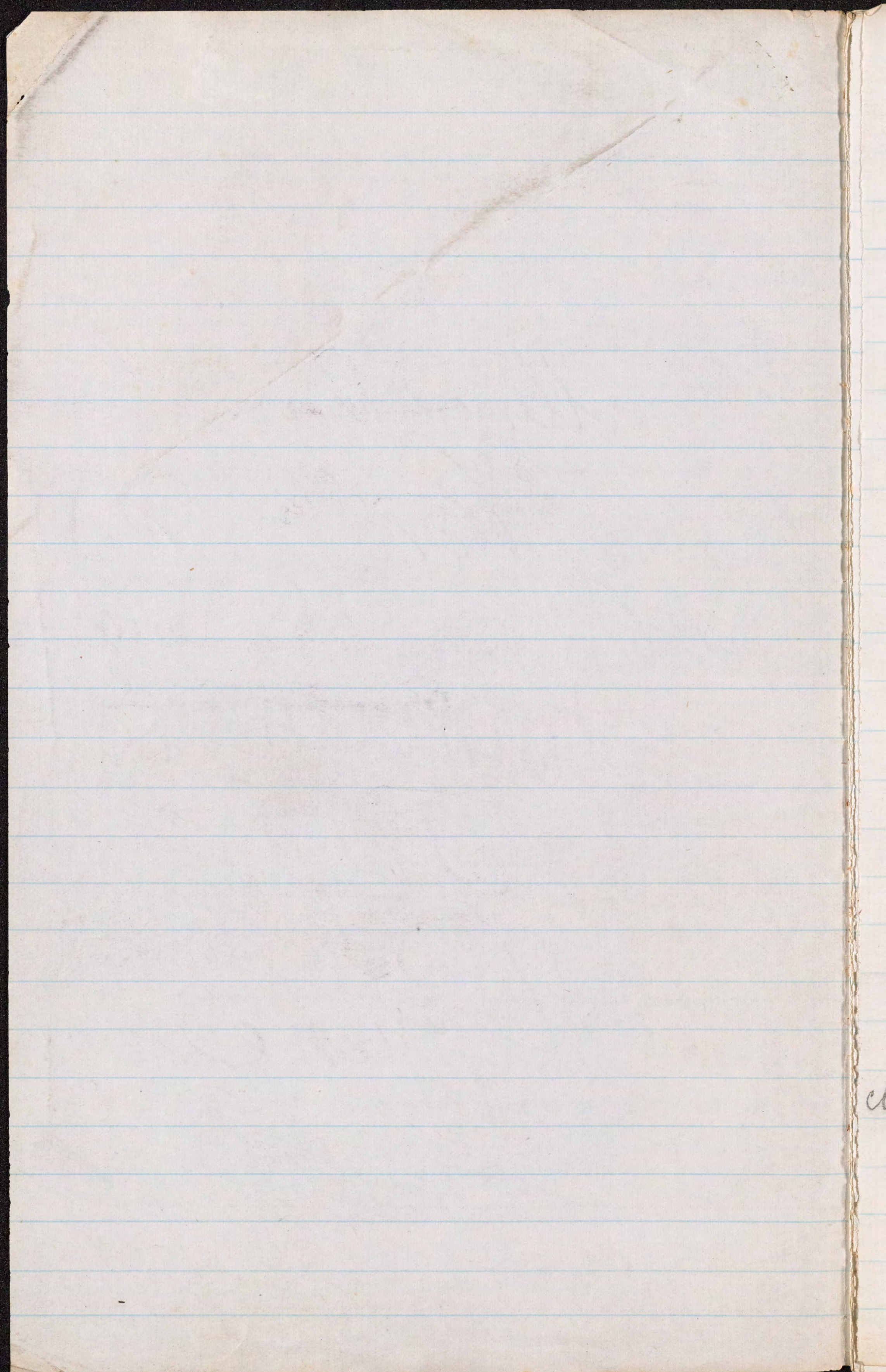
24. ④ Encl. the physico-psychical, and
2nd the usual clinical, classifications
of the ~~different~~ ^{forms or} kinds of insanity.

25. ③ What is the probable ^{function} ~~use~~ of the
nodes of Corti?

26. ② Why do we need to explain
why ~~we~~ ^{all} do not see objects inverted; and
what is the best explanation therefor?

27. ① What is the physiology of stammering;
and what is its best principle of cure?

Memoranda
for
Examinations
on
Hygiene.



Figures - Numbers -
In Hygiene - Required.

Respiration: About the proportion of O_2 & CO_2 in atmosphere.
→ 79 - 21 - $\left(\frac{1}{2500}\right)$

Percentage of CO_2 dangerous:

10 - 5 - 2.

Extreme range of variation of
barometer: 3 inches.

Desirable relative humidity:
between 65 & 70, sat. = 100.

Temperature for heat disinfection:
150° to 300° Fahr.

1 gallon a minute

Minimum lodg. room,
700 cub. feet

Air used up by adult man
in 24 hours - 350 cub. feet.

Space per patient in hosp. ward,
1500 cub. feet.

Desirable air ^{supply} per hour, -
2000 cub. feet each patient.

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2

Dimensions of a model Hoep. ward,
80 x 25 x 20 ft -
for 20 to 24 men.
5 or 6 windows each side.

Highest temperature in the shade, 120° Fahr.
Lowest " " — 74° "

Annual mean of torrid climate, 77° - 80°

Annual mean at Philada, 53° Fahr.

Greatest annual rainfall, ^{anywhere,} over 600 inches.

Annual rainfall at Philada, 42 " ,

Temperature of Cold Bath - 32° - 70° F.

Cool " 70° - 85°

Temid " 85° - 90°

Warm " 90° - 95°

Hot " 96° - 100°

Vapor - never above 120° -
better below 110° ,

Hot air " 130° - 250°

Estimated muscular strength of a man,

$\frac{1}{7}$ to $\frac{1}{10}$ of a horsepower

Average ordinary day's labor - 300 tons lifted 1 foot.

Maximum ————— over 700 " " "

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~~Amount~~
Amount lifted in walking on a level,
 $\frac{1}{20}$ of the body's weight through the
distance walked,

Maximum of human walking (Weston)

100 miles in 22 hours —

400 " in 5 days.

Maximum of human lifting - 2200 lbs (Windsor)

Average day's march for soldiers
12 miles. (14?).

Required amount of solid food
for an adult daily - 40 oz, $\frac{2}{3}$ veg.
- with 20 to 40 or 50 fl oz. liquids -
Minimum food, about 20 oz solids
(leaving out Cornaro)

Specific gravity of good milk -

1028 to 1032 } ^{minimum} 1027.

Proportion of cream rises - 8 to 15
parts in 100 —

Minimum allowable, 7 or 8 - maximum
(rare) 30

9 per cent, usual in good milk, -
12 not at all uncommon.

Time ^{required} to obtain ^{the} strength of beef-essence,
 without contact with water,
 boiling the water around it, 3 hours
 or more.

Time to macerate beef for beef tea,
 2 hours;
 then boil 20 to 30 minutes.

Amount of gluten in good wheat,
 10 to 15 per cent;
 " starch, 50 to 75 per cent.

Estimate of water-supply per head
 in a community, 25 to 30 gallons daily;
 for personal consumption (in food & drink)
 1/2 for each pound of weight.

Organic matter in the best drinking water
 1 1/2 gr. in a gallon
 10 gr. maximum allowable,

14

1. To obtain a
sufficient quantity of
large water, 2 1/2 lbs
are required.

2. To separate the
oil from the
water, 2 1/2 lbs
are required.

3. To separate the
oil from the
water, 2 1/2 lbs
are required.

4. To separate the
oil from the
water, 2 1/2 lbs
are required.

5. To separate the
oil from the
water, 2 1/2 lbs
are required.

6. To separate the
oil from the
water, 2 1/2 lbs
are required.

Alcoholic strength of Beers,

1 to 10 per cent.;

lager about 5 to 6;

porter 4 to 8;

ale 7 to 10;

Port wine	15	24
Sherry	"	25
Madeira	"	22
Claret	5	15
Champagne	5	15
Rhine wines	5	16

Brandy, Whiskey

Gin, Rum, - about 50 per cent.

Hypocritic Dose of ale, - 2 fl oz.

(for a man not accustomed) red wine (sherry) 1 fl. oz.
whiskey - 1 fl drachm to 1/2 fl oz.

For women - rather less -

For children - fractions only of the same.

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6

Amount of sleep required nightly for
adult — 6 hrs minimum —

7 required by most persons

8 better for every one,

Child of 10 yrs — 10 to 12 hours sleep.

Age of greatest number of insane patients,

Europe between 30 & 40 yrs —

America " 20 & 30 "

Hours of daily study —
maximum 16

Sufficiency for almost all, 8

Child of 12 years — 3.

Maximum time of detention at quarantine
necessary for a ship under any circumstances
with cleaning & heat disinfection —
5 days. — (a minority opinion)

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Lowest inevitable annual mortality
anywhere - 15 to 17 per 1000
inhabitants -

Average length of life the world over
33 to 35 years (approximation!)

In Great Britain (~~U.S.~~)
about 40 years -

Average births to a marriage
Europe & America - 3 to 4

Females born to 100 males,
about 93 1/2

" die
about 92.

Deaths to population, annually, U.S.
about 1 in 45

" Mortality of Cities annually, about from
25 to 35 per 1000.

Deaths from phthisis - 1/8 to 1/5 of total mortality.
In a city - for every death about 25 cases sickness.
Total Population of the world, near 1400 millions: U.S., 38 1/2 mill.

Mortality of children under 1 year of age
from 1/4 to 1/5 of total mortality
under 5 years - nearly or quite 1/2 of total mortality.
1/3, sometimes

1870 Census.

My name
in
My name.

